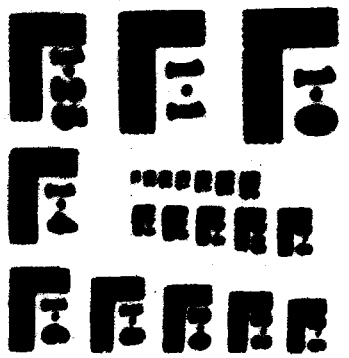
AD-A186 993 FINAL TECHNICAL REPORTS 15 JUNE 1983 THROUGH 31 MARCH 1986 ON CONTRACT N00014-83-K-0472(U) STANFORD UNIV CA DEPT OF STATISTICS J H FRIEDMAN 25 NOV 87 1/1

UNCLASSIFIED N00014-83-K-0472 F/G 12/3 NL



DTIC FILE COPY

AD-A186 993

Stanford University

STANFORD, CALIFORNIA 94305

DEPARTMENT OF STATISTICS
SEQUOIA HALL

November 25, 1987

Dr. Neal Gerr
Statistics and Probability Program
Office of Naval Research
Code 411 SP
Arlington, VA 22217

DTIC
ELECTE
DEC 16 1987
S D
H

Final Report, N00014-830-K-0472

Dear Dr. Gerr:

During the course of this project the research accomplished under it has been used successfully in furthering the goals given in our proposal. Faculty and graduate students supported by this contract have been instrumental in developing procedures for data analysis. Two such procedures are 'projection pursuit' in which higher dimensional data can be analyzed by reduction to few dimensions and also viewed graphically. The "bootstrap" procedure, which is a nonparametric procedure, permits statistical analyses of various kinds such as regression, classification and density estimation without resort to distribution assumptions. Our work and that of the scientific community has been enhanced through additional work on these procedures and their application to diverse data sets. Several Ph.D.'s in computational and graphical statistics have been awarded under this program.

The list of the technical issued during the period of the contract is attached. We thank the Office of Naval Research for its support.

Sincerely yours,

Jerome H. Friedman
Principal Investigator

cc: R. Simpson, ONR Representative

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

87 12 9 134

Technical Reports from 6/15/83 to 3/31/86

Final Report, N00014-83-K-0472

1. Friedman, J.H., Smart User's Guide, October 1984.
2. Hastie, T.J. and Tibshirani, R.J., Generalized Additive Models, September 1984.
3. Tibshirani, R.J., Bootstrap Confidence Intervals, October 1984.
4. Tibshirani, R.J., Local Likelihood Estimation, September 1984.
5. Friedman, J.H., A Variable Span Smoother, November 1984.
6. Owen, A., Nonparamteric Likelihood Ratio Intervals, December 1985.
7. McDonald, J.A. and Owen, A.B., Smoothing with Split Linear Fits, October 1984.
8. Marhoul, J.C. and Owen, A.B., Consistency of Smoothing with Running Linear Fits, November 1984.
9. McDonald, J.A. and Pedersen, J., Computing Environments for Data Analysis: Part I: Introduction, April 1984.
10. McDonald, J.A. and Pedersen, J., Computing Environments for Data Analysis: Part 2: Hardware, April 1984.
11. Hastie, T., Principal Curves and Surfaces, November 1984.
12. Friedman, J.H., Classification and Multiple Regression through Projection Pursuit, January 1985.
13. Marhoul, J.C., A Model for Large Sparse Contingency Tables, December 1984.
14. Efron, B., Better Bootstrap Confidence Intervals, November 1984.
15. Segal, M., Recursive Partitioning Using Ranks, August 1985.
16. Johns, M. V., Fully Nonparametric Empirical Bayes Estimation via Projection Pursuit, August 1985.
17. Altman, N.S., Expert Systems and Statistical Expertise, Part I: Statistical Expert Systems, May 1985.
18. Friedman, J.H., Exploratory Projection Pursuit, November 1985.
19. Efron, B. and Tibshirani, R., The Bootstrap Method for Assessing Statistical Accuracy, October 1985.
20. Hjort, N.L., Bayesian Nonparametric Bootstrap Confidence Intervals, November 1985.
21. Hjort, N.L., Bootstrapping Cox's Regression Model, November 1985.
22. Hjort, N.L., On Frequency Polygons and Average Shifted Histograms in Higher Dimensions, February 1986.

QUALITY INSPECTED 4

Avail and/or
Dist Special
A-1

23. Scott, D.L. and Terrell, G.R., Biased and Unbiased Cross-Validation in Density Estimation, April 1986.

24. McDonald, J.A. and Pedersen, J., Computing Environments for Data Analysis: Part 3: Programming Environments, May 1986.

END

FEB.

1988

DTIC